



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,836	09/29/2003	Michael Scharland	07072-948001	2532
26161	7590	05/30/2006	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			KO, DANIEL BOKMIN	
			ART UNIT	PAPER NUMBER
			2189	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/673,836	<b>Applicant(s)</b> SCHARLAND ET AL.	
	<b>Examiner</b> Daniel B. Ko	<b>Art Unit</b> 2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2-13 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-13 and 15-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This action is responsive to the Amendment filed on 3/13/2006. Applicants cancelled claims 1, 14 and amended claims 2, 6, 8, 10, 12, 15 and 19.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 2-13 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamvysselis et al. (U.S. Patent 6,496,908 B1), hereinafter simply Kamvysselis.

Regarding claims 2, 7-9, and 15, Kamvysselis teaches a method for storing data, the method comprising:

writing first and second portions of the data to respective first and second slots within a temporary storage location (column 1, lines 49-56; column 3, lines 31-44);

buffering a plurality of mirror request to copy the data from the temporary storage location to a mirror (column 6, lines 6-10; column 10, lines 23-27);

determining the validity of the data written to the temporary storage location (column 9, lines 48-53)

Art Unit: 2189

if the data written to the temporary storage location is valid, sending the mirror request for execution (Fig. 6, step 108, column 9, lines 58-62); and

if the data written to the temporary storage location is invalid, deleting the mirror request (Fig. 6, step 124, column 9, lines 53-57; column 10, lines 19-22).

Regarding claims 3 and 16, Kamvysselis teaches a method, further comprising buffering a mirror request for each of the first and second portions (column 6, lines 6-10; column 10, lines 23-27).

Regarding claims 4 and 17, Kamvysselis teaches a method, further comprising sending all the buffered mirror requests for execution if the data is determined to be valid (column 9, lines 48-53; column 9, lines 58-62).

Regarding claims 5 and 18, Kamvysselis teaches a method, further comprising deleting all the buffered mirror requests if the data is determined to be invalid (Fig. 6, step 124, column 9, lines 53-57; column 10, lines 19-22).

Regarding claims 6 and 19, Kamvysselis teaches a method, wherein buffering the mirror request comprises buffering the mirror request in a memory location separate from the temporary storage location (column 5, lines 56-67; column 6, lines 1-8).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamvysselis et al. (U.S. Patent 6,496,908 B1), hereinafter simply Kamvysselis, in view of Lecrone et al (U.S. Patent 6,954,835 B1), hereinafter simply Lecrone.

Regarding claim 10, Kamvysselis teaches a data storage system for storing data provided by a host, the system comprising:

- a host adaptor for communicating with the host (column 3, lines 15-16);
- a cache memory in communication with the host adaptor for temporary storage of data (column 3, lines 31-36);

a mirror queue for queuing mirror requests for copying the data from the cache memory to a mirror (column 6, lines 6-10; column 10, lines 23-27).

Kamvysselis fails to teach a holding pen for accumulating the mirror requests prior to sending the mirror requests to the mirror queue. Lecrone teaches a holding pen for accumulating the mirror requests prior to sending the mirror requests to the mirror queue (shadow queue, column 6, lines 11-20). At the time of invention it would have been obvious to a person of ordinary skill in the art to combine the Kamvysselis with Lecrone. The motivation for doing so would have been an efficient process of data mirroring (column 6, lines 11-20), because it postponed a mirror request until the primary command executed successfully.

Regarding claim 11, Kamvysseli teaches a system, wherein the host adaptor comprises a local memory and the holding pen is maintained in the local memory (Fig. 1, column 3, lines 27-59).

Regarding claim 12, Kamvysseli teaches a system, wherein the holding pen is maintained in the global memory (column 3, lines 31-36)

Regarding claim 13, Kamvysseli teaches a system, further comprising a remote adaptor configured to inspect the mirror queue and to copy selected data from the

Art Unit: 2189

cache memory to a mirror in response to mirror requests queued therein (column 3, lines 39-65).

***Response to Arguments***

Applicant's arguments with respect to claim 2-13 and 15-19 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2189

**Conclusion**

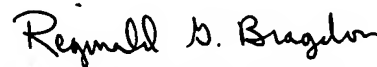
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel B. Ko whose telephone number is 571-272-8194.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald G. Bragdon can be reached on 571-272-4204. The fax phone number for the organization where this application or proceeding is assigned is 703-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel B. Ko  
AU 2189



REGINALD G. BRAGDON  
PRIMARY EXAMINER